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EXAMINER	
AUGHENBAUGH, WALTER	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/601,832	WERTH, MICHAEL	
	Examiner	Art Unit	
	Walter B. Aughenbaugh	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,11 and 13-19* is/are pending in the application.

4a) Of the above claim(s) *8 and 19* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9,11 and 13-18* is/are rejected.

7)☒ Claim(s) *2 and 9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/12/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Acknowledgement of Applicant's Amendments

1. The amendments made in claims 1, 2, 4, 11, 13 and 15-17 in the Amendment filed May 24, 2007 (Amdt. E) have been received and considered by Examiner.

2. Applicant's cancellation of claims 10 and 12 in Amdt. E has been acknowledged by Examiner.

Election/Restrictions

3. This application contains claims 8 and 19 drawn to an invention nonelected with traverse in the reply filed on November 30, 2004 (regarding claim 8). Claim 19 was newly presented in the Amendment filed September 29, 2006, and was withdrawn in paragraph 9 of the Office Action mailed January 24, 2007 due to original presentation.

A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

WITHDRAWN REJECTIONS

4. All 35 U.S.C. 102 and 103 rejections made of record in the previous Office Action mailed January 24, 2007 have been withdrawn due to Applicant's amendments in claims 1, 2, 11 and 13 in Amdt. E.

REPEATED REJECTIONS

Claim Rejections - 35 USC § 112

5. The 35 U.S.C. 112, second paragraph, rejection of claim 2 made of record in paragraph 12 of previous Office Action mailed January 24, 2007 has been repeated for the reasons previously made of record. The scope that Applicant intends to delineate in claim 2 cannot be

ascertained. Applicant's amendment in claim 2 does not particularly point out and distinctly claim the subject matter which applicant regards as the invention because the recitation "and outside the polyolefin layer", read with the language of the claim prior to this recitation, makes it unclear whether or not Applicant intends to claim that the two layers recited in the last two lines of the claim are components of "the outer sealing layers": the recitation "and outside the polyolefin layer" makes it unclear if the listing of the two layers recited in the last two lines of the claim is a continuation of the list of layers in lines 4-7 of the claim (which the claim positively identifies as "the outer sealing layers"), or if the two layers recited in the last two lines of the claim are intended to be recited as components of the pipe that are separate from "the outer sealing layers". The presence of the recitation "and outside the polyolefin layer" indicates that the two layers recited in the last two lines of the claim are intended to be recited as components of the pipe that are separate from "the outer sealing layers", because the recitation "and outside the polyolefin layer" is otherwise unnecessary: due to the "in succession" recitation, along with recitation of "an inner layer" as a component of "the outer sealing layers", the two layers recited in the last two lines of the claim are necessarily "outside the polyolefin layer". If Applicant does intend to recite that the two layers recited in the last two lines of the claim are intended to be recited as components of the pipe that are separate from "the outer sealing layers", the scope that Applicant intends to delineate in claim 2 cannot be ascertained since the scope of claim 2 is closed to solely the "unsealed metal flexible inner layer" and the "outer sealing layers" due to the "consisting" transitional phrase indicator in line 1 of claim 2.

NEW OBJECTIONS

Claim Objections

6. Claims 2 and 9 are objected to because of the following informalities: there is a period at the end of line 7 of claim 2, but the claim ends in line 11 of the claim.

In regard to claim 9, "metal" should be inserted between "unsealed" and "flexible" for consistency with the language of claim 1.

Appropriate correction is required.

NEW REJECTIONS

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

8. Claims 1-3, 9, 11, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley et al. (USPN 6,357,485) in view of Flepp et al. (USPN 6,555,243).

In regard to claims 1 and 9, Quigley et al. teach an offshore flexible pipe (item 10, col. 1, lines 20-42 and col. 8, lines 43-50) consisting of an unsealed metal flexible inner layer (liner, item 12, col. 8, lines 51-62, Fig. 7: Quigley et al. teach that the unsealed flexible inner layer [liner, item 12, col. 8, lines 51-62] comprises a wound [coiled] metal strip [col. 8, lines 43-53 and col. 1, lines 20-27]) and outer sealing layers, in which the outer sealing layers are, in succession: an inner layer formed from at least one thermoplastic polymer comprising a polyamide (composite layer, item 14, which comprises fiber and a matrix, where nylon, which is polyamide, is a suitable material for both the fibers and the matrix, where a thermoplastic material is a suitable material for the fibers, col. 10, lines 3-12, 31-39 and 62-67 and col. 11,

lines 3-8, and Fig. 7, and where aramid, which is also polyamide, is also a suitable material for the fiber (col. 10, lines 62-67 and Fig. 7)) and a polyolefin layer, item 58, where suitable materials for the polyolefin layer are polyethylene and polypropylene, both of which are polyolefins (col. 15, lines 38-44 and Fig. 7). Quigley et al. teach that suitable materials for the inner layer (composite layer, item 14) of the sealing layers are thermoplastic polymers such as polyamide (nylon-6) and polyethylene and polypropylene (which are both polyolefins) (col. 11, lines 3-7 and col. 10, lines 31-39).

Quigley et al. fail to explicitly teach that the material of the inner layer (composite layer, item 14) of the sealing layers is a blend of a polyamide and a polyolefin having a polyamide matrix.

Flepp et al., however, disclose a multilayer pipe (col. 1, lines 6-9 and col. 5, lines 18-36) comprising an inner layer comprising a blend of a polyamide and a polyolefin having a polyamide matrix (the adhesion-promoting layer of Flepp et al. that is made from a mixture of a polyamide and a compatibilizer is a layer comprising a blend of a polyamide and a polyolefin having a polyamide matrix since the compatibilizer is a polyolefin, col. 5, lines 28-29 and col. 6, lines 50-57). Therefore, one of ordinary skill in the art would have recognized to have used the blend of a polyamide and a polyolefin having a polyamide matrix taught by Flepp et al. as the mixture of the inner layer since a blend of a polyamide and a polyolefin having a polyamide matrix is a well known adhesion-promoting material for use as the material of an inner layer of a multilayer hose as taught by Flepp et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the blend of a polyamide and a polyolefin having a polyamide matrix

taught by Flepp et al. as the mixture of the inner layer since a blend of a polyamide and a polyolefin having a polyamide matrix is a well known adhesion-promoting material for use as the material of an inner layer of a multilayer hose as taught by Flepp et al.

In regard to claim 2, Quigley et al. teach an offshore flexible pipe (item 10, col. 1, lines 20-42 and col. 8, lines 43-50) consisting of an unsealed metal flexible inner layer (liner, item 12, col. 8, lines 51-62, Fig. 7: Quigley et al. teach that the unsealed flexible inner layer [liner, item 12, col. 8, lines 51-62] comprises a wound [coiled] metal strip [col. 8, lines 43-53 and col. 1, lines 20-27]) and outer sealing layers, in which the outer sealing layers are, in succession: an inner layer formed from at least one thermoplastic polymer comprising a polyamide (composite layer, item 14, which comprises fiber and a matrix, where nylon, which is polyamide, is a suitable material for both the fibers and the matrix, where a thermoplastic material is a suitable material for the fibers, col. 10, lines 3-12, 31-39 and 62-67 and col. 11, lines 3-8, and Fig. 7, and where aramid, which is also polyamide, is also a suitable material for the fiber (col. 10, lines 62-67 and Fig. 7)), a polyolefin layer, item 58, where suitable materials for the polyolefin layer are polyethylene and polypropylene, both of which are polyolefins (col. 15, lines 38-44 and Fig. 7), and, outside the polyolefin layer, item 58, an outer layer formed from at least one thermoplastic polymer (item 14', col. 16, lines 51-67, col. 10, lines 3-12, 31-39 and 62-67 and col. 11, lines 3-8 and Fig. 8). Since Quigley et al. teach that the layers 14 and 14' need not be identical (col. 16, lines 51-67), the embodiment where inner layer, item 14, and outer layer, item 14', are different thermoplastic polymers, as recited by identification of the polymer of the inner layer as polymer (A) and by identification of the polymer of the outer layer as polymer (B) in Applicant's claims, falls within the scope of the teachings of Quigley et al. (col. 10, lines 3-12, 31-39 and 62-67 and

col. 11, lines 3-8). Quigley et al. teach that suitable materials for the inner layer (composite layer, item 14) of the sealing layers are thermoplastic polymers such as polyamide (nylon-6) and polyethylene and polypropylene (which are both polyolefins) (col. 11, lines 3-7 and col. 10, lines 31-39).

Quigley et al. fail to explicitly teach that the material of the inner layer (composite layer, item 14) of the sealing layers is a blend of a polyamide and a polyolefin having a polyamide matrix.

Flepp et al., however, disclose a multilayer pipe (col. 1, lines 6-9 and col. 5, lines 18-36) comprising an inner layer comprising a blend of a polyamide and a polyolefin having a polyamide matrix (the adhesion-promoting layer of Flepp et al. that is made from a mixture of a polyamide and a compatibilizer is a layer comprising a blend of a polyamide and a polyolefin having a polyamide matrix since the compatibilizer is a polyolefin, col. 5, lines 28-29 and col. 6, lines 50-57). Therefore, one of ordinary skill in the art would have recognized to have used the blend of a polyamide and a polyolefin having a polyamide matrix taught by Flepp et al. as the mixture of the inner layer since a blend of a polyamide and a polyolefin having a polyamide matrix is a well known adhesion-promoting material for use as the material of an inner layer of a multilayer hose as taught by Flepp et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the blend of a polyamide and a polyolefin having a polyamide matrix taught by Flepp et al. as the mixture of the inner layer since a blend of a polyamide and a polyolefin having a polyamide matrix is a well known adhesion-promoting material for use as the material of an inner layer of a multilayer hose as taught by Flepp et al.

In regard to claim 3, Quigley et al. teach that thermoplastics such as polyamide (nylon) are suitable materials for the outer layer, item 14' (col. 16, lines 51-67, col. 10, lines 3-12, 31-39 and 62-67 and col. 11, lines 3-8).

In regard to claim 11, Quigley et al. teach an offshore flexible pipe (item 10, col. 1, lines 20-42 and col. 8, lines 43-50) consisting of sealing layers, in succession: an inner layer formed from at least one thermoplastic polymer (liner, item 12), where thermoplastics such as polyamide, polyethylene and polypropylene are suitable materials for the inner layer (col. 8, line 51-62, col. 8, line 65-col. 9, line 14 and Fig. 4) and where the inner layer would be in contact with the fluid being transported in the pipe if fluid were being transported in the pipe (Fig. 4 and col. 8, lines 43-53), a coextrusion tie layer (item 56, col. 14, lines 3-9 and 29-41, col. 17, lines 39-50 [which discloses that the pipe can be formed of coextruded polymers] and Fig. 4) and a polyolefin layer (composite layer, item 14, Fig. 4), where suitable materials for the composite layer are polyethylene and polypropylene (col. 10, lines 31-38 and col. 11, lines 3-7).

Quigley et al. fail to explicitly teach that the material of the inner layer (liner, item 12) of the sealing layers is a blend of a polyamide and a polyolefin having a polyamide matrix or any of the other materials recited in claim 11.

Flepp et al., however, disclose a multilayer pipe (col. 1, lines 6-9 and col. 5, lines 18-36) comprising an inner layer comprising a blend of a polyamide and a polyolefin having a polyamide matrix (the adhesion-promoting layer of Flepp et al. that is made from a mixture of a polyamide and a compatibilizer is a layer comprising a blend of a polyamide and a polyolefin having a polyamide matrix since the compatibilizer is a polyolefin, col. 5, lines 28-29 and col. 6, lines 50-57). Therefore, one of ordinary skill in the art would have recognized to have used the

blend of a polyamide and a polyolefin having a polyamide matrix taught by Flepp et al. as the material of the inner layer of Quigley et al. since a blend of a polyamide and a polyolefin having a polyamide matrix is a well known adhesion-promoting material for use as the material of an inner layer of a multilayer hose as taught by Flepp et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the blend of a polyamide and a polyolefin having a polyamide matrix taught by Flepp et al. as the material of the inner layer of Quigley et al. since a blend of a polyamide and a polyolefin having a polyamide matrix is a well known adhesion-promoting material for use as the material of an inner layer of a multilayer hose as taught by Flepp et al.

In regard to claim 13, Quigley et al. teach an offshore flexible pipe (item 10, col. 1, lines 20-42 and col. 8, lines 43-50) consisting of sealing layers, in succession: an inner layer formed from at least one thermoplastic polymer (liner, item 12), where thermoplastics such as polyamide, polyethylene and polypropylene are suitable materials for the inner layer (col. 8, line 51-62, col. 8, line 65-col. 9, line 14 and Fig. 5) and where the inner layer would be in contact with the fluid being transported in the pipe if fluid were being transported in the pipe (Fig. 5 and col. 8, lines 43-53), a coextrusion tie layer (item 56, col. 14, lines 3-9 and 29-41, col. 17, lines 39-50 [which discloses that the pipe can be formed of coextruded polymers] and Fig. 5), a polyolefin layer (composite layer, item 14, Fig. 5), where suitable materials for the composite layer are polyethylene and polypropylene (col. 10, lines 31-38 and col. 11, lines 3-7), and an outer layer formed from at least one thermoplastic polymer (barrier layer, item 58) where suitable materials for the thermoplastic layer are thermoplastics such as polyethylene and polypropylene (col. 15, lines 38-44 and Fig. 5) the embodiment where inner layer (liner, item 12)

and outer layer (barrier layer, item 58) are of different thermoplastic polymers, as recited by identification of the polymer of the inner layer as polymer (A) and by identification of the polymer of the outer layer as polymer (B) in Applicant's claims, falls within the scope of the teachings of Quigley et al. since inner layer (liner, item 12) and outer layer (barrier layer, item 58) are disclosed as separate layers that can comprise one of a plurality of thermoplastic polymers (col. 8, line 51-62, col. 8, line 65-col. 9, line 14 and (col. 15, lines 38-44).

Quigley et al. fail to explicitly teach that the material of the inner layer (liner, item 12) of the sealing layers is a blend of a polyamide and a polyolefin having a polyamide matrix or any of the other materials recited in claim 13.

Flepp et al., however, disclose a multilayer pipe (col. 1, lines 6-9 and col. 5, lines 18-36) comprising an inner layer comprising a blend of a polyamide and a polyolefin having a polyamide matrix (the adhesion-promoting layer of Flepp et al. that is made from a mixture of a polyamide and a compatibilizer is a layer comprising a blend of a polyamide and a polyolefin having a polyamide matrix since the compatibilizer is a polyolefin, col. 5, lines 28-29 and col. 6, lines 50-57). Therefore, one of ordinary skill in the art would have recognized to have used the blend of a polyamide and a polyolefin having a polyamide matrix taught by Flepp et al. as the material of the inner layer of Quigley et al. since a blend of a polyamide and a polyolefin having a polyamide matrix is a well known adhesion-promoting material for use as the material of an inner layer of a multilayer hose as taught by Flepp et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the blend of a polyamide and a polyolefin having a polyamide matrix taught by Flepp et al. as the material of the inner layer of Quigley et al. since a blend of a

polyamide and a polyolefin having a polyamide matrix is a well known adhesion-promoting material for use as the material of an inner layer of a multilayer hose as taught by Flepp et al.

In regard to claim 14, Quigley et al. teach that thermoplastics such as polyamide are suitable materials for the outer layer (barrier layer, item 58) (col. 15, lines 38-44).

9. Claims 4, 5, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley et al. (USPN 6,357,485) in view of Flepp et al. (USPN 6,555,243) and in further view of Strassel et al. (USPN 5,601,893).

Quigley et al. and Flepp et al. teach the pipe as discussed above in regard to claims 2 and 14.

In regard to claims 4 and 15, Quigley et al. and Flepp et al. fail to explicitly teach that the polymers (A) and (B) are one of the polymers listed in claim 4.

Strassel et al., however, disclose a multilayered offshore flexible pipe (col. 1, lines 15-21 and col. 2, lines 55-63) that offers significant mechanical resistance especially to internal pressure thus permitting use of the pipe in offshore oil and gas production (col. 1, lines 15-21). Strassel et al. teach that polyamide is a suitable polymer for the outer layer, item 9, of the sheath (col. 5, lines 12-24) and specifically teach polyamide-11 (PA-11) as the polyamide of the outer layer, item 9 (col. 13, lines 20-40). Strassel et al. also teach that PA-11 does not blister or inflate when in contact with live crude and that plasticized PA-11 is leak-proof when used as the sheath material for flexible metal pipes (col. 2, lines 13-16 and 28-31). Therefore, one of ordinary skill in the art would have recognized to have used PA-11 as polyamides (A) and (B) of the pipe of Quigley et al. and Flepp et al. since PA-11 is a well known polyamide for use as the material of layers in a multilayered offshore flexible pipe that offers significant mechanical resistance

especially to internal pressure thus permitting use of the pipe in offshore oil and gas production due to the fact that PA-11 does not blister or inflate when in contact with live crude and that plasticized PA-11 is leak-proof when used as the sheath material for flexible metal pipes as taught by Strassel et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used PA-11 as polyamides (A) and (B) of the pipe of Quigley et al. and Flepp et al. since PA-11 is a well known polyamide for use as the material of layers in a multilayered offshore flexible pipe that offers significant mechanical resistance especially to internal pressure thus permitting use of the pipe in offshore oil and gas production due to the fact that PA-11 does not blister or inflate when in contact with live crude and that plasticized PA-11 is leak-proof when used as the sheath material for flexible metal pipes as taught by Strassel et al.

In regard to claims 5 and 16, Quigley et al., Flepp et al. and Strassel et al. teach the pipe as discussed above in regard to claims 4 and 15.

Quigley et al., Flepp et al. and Strassel et al. fail to explicitly teach that the pipe of Quigley et al. and Flepp et al., or the PA-11 of Strassel et al., contains a plasticizer.

Strassel et al., however, teach that plasticized PA-11 is leak-proof when used as the sheath material for flexible metal pipes (col. 2, lines 28-31). Therefore, one of ordinary skill in the art would have recognized to have added a plasticizer to the PA-11 of the pipe taught by Quigley et al., Flepp et al. and Strassel et al. in order to render the pipe leak-proof when used as the sheath material for flexible metal pipes for use in oil or gas extraction as taught by Strassel et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a plasticizer to the PA-11 of the pipe taught by Quigley et al., Flepp et al. and Strassel et al. in order to render the pipe leak-proof when used as the sheath material for flexible metal pipes for use in oil or gas extraction as taught by Strassel et al.

10. Claims 6 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley et al. (USPN 6,357,485) in view of Flepp et al. (USPN 6,555,243) and in further view of Roeber et al. (USPN 5,858,492).

In regard to claim 6, Quigley et al. and Flepp et al. teach the pipe as discussed above in regard to claim 1.

Quigley et al. and Flepp et al. fail to teach that the pipe comprises a tie layer in which the tie layer is a functionalized polyolefin carrying a carboxylic acid or carboxylic acid anhydride functional group.

Roeber et al., however, disclose a coupling (equivalently, tie) layer that couples a layer comprising a polyolefin molding composition layer to a layer comprising polyamide (col. 10, lines 41-54). Roeber et al. disclose that a suitable polymer for the coupling layer is a functionalized polyolefin carrying a carboxylic acid or carboxylic acid anhydride functional group (col. 5, lines 7-22 and 28-33) and that the coupling layer firmly bonds the polyolefin molding composition layer and the polyamide layer together (col. 10, line 54). Therefore, one of ordinary skill in the art would have recognized to have formed the pipe of Quigley et al. and Flepp et al. such that it has the tie layer of a functionalized polyolefin carrying a carboxylic acid or carboxylic acid anhydride functional group of Roeber et al. between the polyolefin layer and

polyamide inner layer in order to firmly bond the polyolefin layer and polyamide inner layer together as taught by Roeber et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the pipe of Quigley et al. and Flepp et al. such that it has the tie layer of a functionalized polyolefin carrying a carboxylic acid or carboxylic acid anhydride functional group of Roeber et al. between the polyolefin layer and polyamide inner layer in order to firmly bond the polyolefin layer and polyamide inner layer together as taught by Roeber et al.

In regard to claim 17, Quigley et al. and Flepp et al. teach the pipe as discussed above in regard to claim 11.

Quigley et al. and Flepp et al. fail to teach that the tie layer is a functionalized polyolefin carrying a carboxylic acid or carboxylic acid anhydride functional group.

Roeber et al., however, disclose a coupling (equivalently, tie) layer that couples a layer comprising a polyolefin molding composition layer to a layer comprising polyamide (col. 10, lines 41-54). Roeber et al. disclose that a suitable polymer for the coupling layer is a functionalized polyolefin carrying a carboxylic acid or carboxylic acid anhydride functional group (col. 5, lines 7-22 and 28-33) and that the coupling layer firmly bonds the polyolefin molding composition layer and the polyamide layer together (col. 10, line 54). Therefore, one of ordinary skill in the art would have recognized to have formed the pipe of Quigley et al. and Flepp et al. such the tie layer is a functionalized polyolefin carrying a carboxylic acid or carboxylic acid anhydride functional group of Roeber et al. that is located between the polyolefin layer and polyamide inner layer in order to firmly bond the polyolefin layer and polyamide inner layer together as taught by Roeber et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the pipe of Quigley et al. and Flepp et al. such the tie layer is a functionalized polyolefin carrying a carboxylic acid or carboxylic acid anhydride functional group of Roeber et al. that is located between the polyolefin layer and polyamide inner layer in order to firmly bond the polyolefin layer and polyamide inner layer together as taught by Roeber et al.

11. Claims 7 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley et al. (USPN 6,357,485) in view of Flepp et al. (USPN 6,555,243) and in further view of Hill.

Quigley et al. and Flepp et al. teach the pipe as discussed above. Quigley et al. teach polyethylene as a suitable material of the polyolefin layer.

Quigley et al. and Flepp et al. fail to explicitly teach that the polyethylene is high density polyethylene.

Hill, however, discloses a multilayer pipe that is used to carry petroleum or oil (col. 1, lines 1-10) that consists of a layer of high density polyethylene that is directly bonded to a layer of polyamide (col. 5, lines 36-40). Therefore, one of ordinary skill in the art would have recognized to have used high density polyethylene as the polyethylene of the polyolefin layer of Quigley et al. and Flepp et al. since high density polyethylene is a known suitable material for use in a layer of a multilayer pipe that is used to carry petroleum or oil as taught by Hill.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used high density polyethylene as the polyethylene of the polyolefin layer of Quigley et al. and Flepp et al. since high density polyethylene is a known suitable material for use in a layer of a multilayer pipe that is used to carry petroleum or oil as taught by Hill.

Response to Arguments

12. Applicant's arguments presented on page 6 of Amdt. E regarding the 35 U.S.C. 102 rejection are moot due to the withdrawal of this rejection in this Office Action for the reason provided above.

13. Applicant's arguments presented on page 7 of Amdt. E regarding the 35 U.S.C. 103 rejections of claims 4-7 and 15-18 are moot due to the withdrawal of the 35 U.S.C. 102 rejection in this Office Action for the reason provided above.

14. Applicant's arguments presented on pages 7-9 of Amdt. E regarding the 35 U.S.C. 103 rejection of claim 10 have been fully considered (to the extent that these arguments apply to the new 35 U.S.C. 103 rejection of independent claims 1, 2, 11 and 13) but are not persuasive.

Applicant's arguments are based upon a portion of Flepp (which is reproduced on page 7 of Amdt. E) which is a preferred embodiment of Flepp (and which is taught at col. 8, lines 22-41). This preferred embodiment of Flepp is not relied upon in the rejection of record, so the relevancy of this argument to the rejection of record cannot be ascertained.

Since Flepp teaches that a layer comprising metal can be added to the inside surface of the four layer tube (and would thus be bonded to the polyamide inner layer (a), col. 6, lines 13-21), one of ordinary skill in the art would have expected the blend of Flepp at issue in the rejection of record to bond to a metal layer. Since the compatibilizer that is relied upon in the rejection of record is a polyolefin, one of ordinary skill in the art would have expected the blend of Flepp at issue in the rejection of record to bond to a polyolefin layer, since a polymeric material (e.g. the nylon of Flepp) that can be blended with another polymeric material (e.g. the polyolefin of Flepp) has a certain degree of affinity or compatibility (as opposed to

incompatibility) for that other polymeric material. Applicant's argument here depends upon the presence of a metal layer, which is required by only independent claims 1 and 2, and not by independent claims 11 and 13.

Quigley and Flepp pertain to the same art because both pertain to multilayered polymer tubes comprising at least one layer that comprise/s polyolefin and/or polyamide.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B. Aughenbaugh whose telephone number is (571) 272-1488. While the examiner sets his work schedule under the Increased Flexitime Policy, he can normally be reached on Monday-Friday from 8:45am to 5:15pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye, can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Walter B. Aughenbaugh
8/03/07
WBA

Nasser Ahmad 8/6/07
NASSER AHMAD
PRIMARY EXAMINER